

BACKGROUND

The process for logical, systematic expansion of the publicly owned sewer systems is relatively well defined in dynamic, expanding communities like Chesterfield County, Va. Community planners develop master plans that take into consideration land-use plans and population densities. Engineers then design associated infrastructure, such as sewer lines, pumping stations and publicly owned treatment plants, to accommodate the planned growth. As a public system is expanded, it often is not practical for the public system to “capture” nor serve existing older neighborhoods that were developed using individual, private septic systems for wastewater disposal. Eventually, these systems in older neighborhoods will undoubtedly reach their useful design life. It is then that property owners face difficult and likely expensive challenges to continue the viability of their residence while addressing their failing septic systems.

Failure of septic systems in older neighborhoods may range from individual lot failures to more widespread concerns. With the age of many neighborhoods in Chesterfield County that rely on private septic systems approaching 30, 40, or 50 years or more, this issue is becoming a bigger concern.

The Chesterfield County Department of Utilities has developed this document to serve as a starting point to assist Chesterfield County residents and property owners who are faced with the challenge of aging and/or failing private septic systems.

OVERVIEW OF AVAILABLE OPTIONS

Several options that property owners may explore are provided herein. The options include:

- Replacing the failing system with a conventional or alternative ***on-site sewage disposal systems***
- Participating in an ***assessment district***
- Seeking ***alternative funding*** through federal, state and/or local resources
- Employing ***non-conventional methods*** for serving an individual property
- Using ***extensions of the public system through development***

On-site sewage disposal systems

If a property owner is experiencing septic-system failure, the first option to consider would be to replace or repair the failing system, if practicable. This option may be considered if the size of the property and suitability of the soil allows for the installation of a new septic tank and drain field. For example, soils with more sand than clay will have higher perk rates and will require less area for drain-field replacement.

If soil conditions and land availability are favorable, replacement with a conventional septic system may be feasible. A conventional system consists of two large underground “holding tanks” (three if pumping is required), a distribution box and the drain field. The septic tanks allow the wastewater from the residence to “rest” so that solids settle to the bottom as sludge and oils and grease float to the top and form a floating scum layer. Bacterial action in the tank “treats” the waste in the tank to begin to reduce the level of pathogens and to help break down solids into sludge and floating scum. Effluent typically flows from the septic tank by a single discharge pipe to a distribution box which in turn is connected to a network of perforated pipes in gravel trenches forming the drain field/leach field.

If lot conditions do not favor replacement with a conventional system, the property owner may consider an “alternative” or “engineered” system. These systems pretreat the wastewater before the effluent is released to the drain field. Two common types of alternative systems are media filters and aerobic treatment units. Media filters are aerobic, fixed-film wastewater treatment systems that biologically enhance treatment. An aerobic treatment unit pretreats the wastewater in the septic tank by adding air to break down organic matter, reduce pathogens and transform nutrients.

An alternative system may typically use a smaller and shallower drain field. Several types of drain fields may be used:

- Trenches – same configuration as used with conventional systems
- Pad – a large gravel base (pad) drain field
- Spray – large sprinkler system from which treated effluent is sprayed on the ground surface
- Mound – very clean fill soil deposited on the ground surface with a perforated pipe placed in the soil
- Drip – perforated pipe about size of a garden hose placed in the soil and normally very shallow, less than 6 inches deep

There are many types of alternative systems and multiple solutions may apply for any given lot. Only professional engineers and authorized on-site soil evaluators are certified to design alternative septic systems. Please refer to the Virginia Department of Health Web site for additional information:
<http://www.vdh.virginia.gov/onsite>

Assessment districts

If failing septic systems are widespread in a community, property owner(s) may choose to pursue an assessment district to extend public sewer into the area. In 1989, the Chesterfield County Board of Supervisors adopted a policy of creating assessment districts to fund water and wastewater extensions into areas of existing communities. To establish an assessment district, a public hearing is required and the Board of Supervisors may create an assessment district if the majority of the property owners in a given area support such action. The creation of assessment districts is primarily used for residential areas, but several areas of existing/future commercial and mixed-use development have been served via assessment districts. If an assessment district is created, all properties will be assessed for the total cost of the project.

The total project costs of the extension are divided among the properties on a per-lot or per-acre basis. Liens are recorded against each property in the amount of the assessment. Property owners may elect to pay their assessment as a lump sum over a 20-year period at a set interest rate. Property owners aged 65 or older, who occupy a dwelling on their properties, may have their payments deferred until their properties changes hands.

To learn more about assessment districts, please contact the Chesterfield County Department of Utilities Development Section.

Alternative funding

A property owner may choose to pursue alternative funding to finance a utility project to extend public sewer into a neighborhood. These funds may be available through federal, state or local means. The following provides a general description of some possible funding opportunities:

A. Federal Grants

Each year in the Appropriations Bill, Congress identifies a number of special-needs projects for funding as grants from the U.S. Environmental Protection Agency. The authority to award these special appropriation grants has been delegated to EPA's 10 regional offices. These projects are often referred to as SPAPs (Special Appropriation Projects) or STAGs (State and Tribal Assistance Grants), which is the actual name of the grants in the appropriations bill. In some cases, Chesterfield County may request a STAG from the EPA. STAG pays for up to 55 percent of eligible project costs, which do not include connection fees. The remaining 45 percent or more of costs may be met through fees from residents, other grant funds or a combination of both. Grantees generally have to incur costs before receiving reimbursement.

A STAG request may be submitted once a year, usually in February for the upcoming federal fiscal year, which runs September-October. It must be supported by a federal legislator as part of the appropriations process. If Congress approves funding, the grantee must complete an application process. Funds generally are not available until at least 18 months or more after the request. There usually is a period of about five years to expend the funds. Because a STAG is one of a limited number of requests a locality can make through the appropriations process, these requests are made at the discretion of the county administrator and Board of Supervisors and only in cases where the required matching funds are available. STAG grants are subject to a host of federal laws and executive orders. For more information, please contact the Chesterfield County Utilities Department Planning and Development Section.

B. State funding

The Virginia Department of Environmental Quality, or DEQ, administers the Virginia Clean Water Revolving Loan Fund Program, which offers low-interest loans for improvements to localities with publicly owned wastewater systems. Loans must be repaid with interest. Information about this program is available online at <http://www.deq.state.va.us/cap/wastewtr.html>.

C. Local Assistance

Individuals who have septic systems that are failing, or have failed, may be eligible for assistance through the Emergency Home Repair Program, funded by a federal Community Development Block Grant, or CDBG. Eligibility for assistance includes the following:

- Chesterfield County residency
- proof of ownership
- real estate taxes paid up to date
- proof of property insurance
- verification of gross household income including assets less than 80 percent of area median income
- documentation from the Department of Health that the system is failing or has failed

Applicants who meet *all* of these requirements are eligible for assistance, which is generally awarded on a first-come, first-served basis as funding is available.

Assistance is provided as a grant. A lien is placed on the property through a Deed of Trust for a compliance period of five years if the amount of assistance is less than \$5,000 or 10 years if it exceeds \$5,000. The grant is satisfied by the original applicant’s continued occupation of the property as his or her primary residence. If the home is sold, refinanced, rented or transferred, or the owner dies during the compliance period, all funds must be repaid.

In addition, neighborhood associations are eligible applicants for CDBG funds. They do not have to be nonprofit organizations. However, they must be able to demonstrate the capacity to manage the funds and have qualified staff, not board members, who are capable of managing the project. For more information, contact the Chesterfield County Community Development Block Grant Department.

D. Other Sources of Assistance

Southeast Rural Community Assistance Project Inc., or Southeast RCAP, helps small rural towns and communities needing aid in upgrading their water and wastewater systems. Most programs provide training and technical assistance to rural residents for operation and maintenance of those systems, for capacity building and for economic development in their communities. Some communities in Chesterfield County may be eligible for the Office of Community Services Program, a training and technical assistance program that aids communities in developing the capability and expertise to establish and maintain affordable water and wastewater treatment facilities. More information about this program may be found online at http://www.southeastrcap.org/programs/office_of_comm_service.htm.



Nonconventional Methods

In general, the Utilities Department has designed and constructed the public utility system in a systematic, engineered approach. However, in extreme hardship situations, exceptions to engineering norms and conventions may be considered. Exceptions to the criteria for public wastewater availability and extensions may be considered case by case depending upon the extenuating circumstances. In some situations, private plumbing lines across other properties have been allowed as a method to connect to the public sewer system. Also, private pump stations and force mains may be considered when elevation does not allow for gravity flow. These approaches will only be considered when there are no other reasonable solutions to resolving a problem with an existing septic tank system.

The circumstances supporting this option must be extreme in nature and require thorough discussion and analysis by the Utilities Department. For more information, please contact the Department of Utilities Development Section.

Extensions through Development

Whenever water and wastewater lines are to be constructed to serve new development, the Utilities Department will require that lines be oversized and installed deeper, if necessary, to accommodate areas beyond the proposed development and that easements are recorded to facilitate future extensions to serve both existing and future development.

Where possible, lines may be routed so as to provide direct access to existing homes. When new development is proposed adjacent to an existing residential area, a developer may agree to extend a water or wastewater line into that area in exchange for that neighborhood’s public support of the developer’s plan.

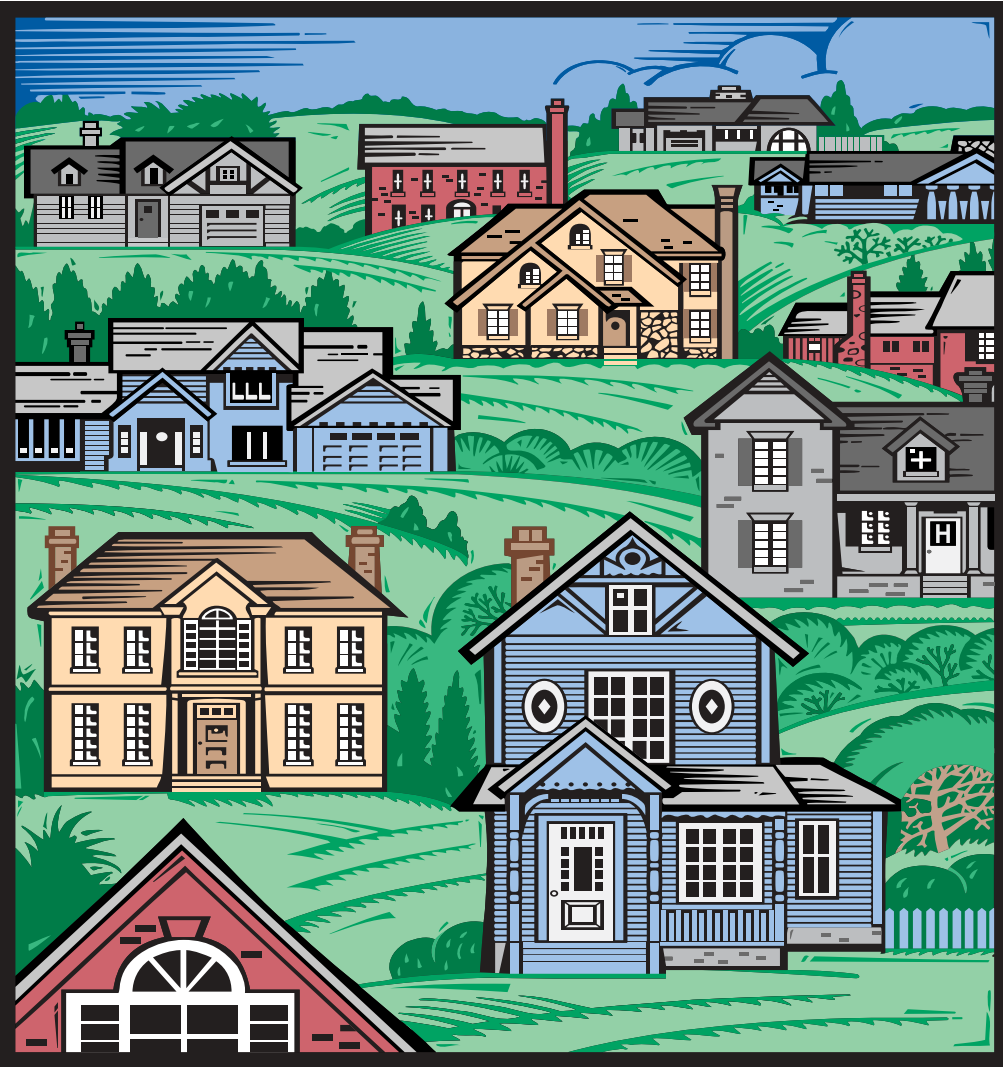
SUMMARY

This information has been assembled by the Chesterfield County Department of Utilities to assist property owners who are faced with the difficult, challenging and oftentimes expensive task of replacing a failed septic system. We are committed to working with individual property owners, as well as neighborhood associations, as they seek ways to address septic-system concerns. Though the available options are described in general detail only, this document illustrates there are alternatives for addressing and resolving septic-system issues. Chesterfield County staff are available to assist in those efforts.

Please contact us at (804) 748-1401 or visit our webpage www.chesterfield.gov/utilities

Chesterfield County, Virginia

Options for Older Communities with Potential Septic-System Failures



Department of Utilities
(804) 748-1401

